

MICRO-ELECTROMECHANICAL SWITCH HAVING A CONDUCTIVE COMPRESSIBLE ELECTRODE

ABSTRACT OF THE DISCLOSURE

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A micro-electro mechanical switch having a restoring force sufficiently large to overcome stiction is described. The switch is provided with a deflectable conductive beam and multiple electrodes coated with an elastically deformable conductive layer. A restoring force which is initially generated by a single spring constant k_0 upon the application of a control voltage between the deflectable beam and a control electrode coplanar to the contact electrodes is supplemented by adding to k_0 additional spring constants k_1, \dots, k_n provided by the deformable layers, once the switch nears closure and the layers compress. In another embodiment, deformable, spring-like elements are used in lieu of the deformable layers. In an additional embodiment, the compressible layers or deformable spring-like elements are affixed to the deflecting beam facing the switch electrodes

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Figs. 1 and 2